AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (currently amended): A method for amplification of a template polynucleotide, comprising:

(a) incubating a reaction mixture, said reaction mixture comprising:

(i) a template polynucleotide;

(ii) a first primer, wherein the first primer is hybridizable to a multiplicity of template polynucleotide sites, wherein the first primer is a population of different composite primers each ~~primer that is hybridizable to a multiplicity of template polynucleotide sites, wherein the composite primer comprises~~ comprising an RNA portion and a 3' DNA portion, wherein each composite primer comprises a 3' random sequence, and wherein each composite primer is a tailed primer that comprises a 5' portion that is not hybridizable to the template polynucleotide under conditions in which the first primer hybridizes to the template polynucleotide;

(iii) a DNA-dependent DNA polymerase; and

(iv) an RNA-dependent DNA polymerase;

wherein the incubation is under conditions that permit generation of a complex comprising an RNA/DNA heteroduplex, wherein said complex comprising an RNA/DNA heteroduplex is produced by ~~first primer random~~ hybridization of the first primer to the template polynucleotide, ~~and~~ primer extension to generate a first primer extension product, hybridization of a second primer to the first primer extension product, and extension of the

second primer to generate a second primer extension product ~~whereby a complex comprising a RNA/DNA heteroduplex is generated~~; and

(b) incubating a reaction mixture, said reaction mixture comprising

(i) at least a portion of the reaction products generated according to step (a);

(ii) an amplification primer, wherein said amplification primer is a composite primer comprising an RNA portion and a 3' DNA portion, wherein the amplification primer comprises some of the sequence of the first primer, and wherein the first primer and the amplification primer are different primers;

(iii) [[an]] a DNA-dependent DNA polymerase; and

(iv) an agent that cleaves RNA from an RNA/DNA ~~hybrid~~ heteroduplex;

wherein the incubation is under conditions that permit RNA cleavage, primer hybridization, primer extension, and displacement of the first primer extension product when its RNA is cleaved and another amplification primer binds to the ~~template~~ second primer extension product and is extended, ~~by~~ such that primer extension and strand displacement are repeated, whereby multiple copies of a polynucleotide amplification product are generated.

Claim 2 (currently amended): The method of claim 1, wherein said DNA-dependent DNA polymerase and said RNA-dependent DNA polymerase of step (a) are the same enzyme.

Claim 3 (currently amended): The method of claim 1, wherein said DNA-dependent DNA polymerase and said RNA-dependent DNA polymerase of step (a) are different enzymes.

Claim 4 (currently amended): The method of claim 1, wherein said first primer and said ~~amplification~~ second primer are the same primer.

Claim 5 (currently amended): The method of claim 1, wherein said first primer and said ~~amplification~~ second primer are different primers.

Claim 6 (original): The method of claim 1, wherein step (b) is initiated by the addition of an agent that cleaves RNA from an RNA/DNA heteroduplex to the reaction mixture of step (a).

Claim 7 (currently amended): The method of claim [[6]] 24, wherein said agent that cleaves RNA from an RNA/DNA heteroduplex is RNase H.

Claims 8-10 (canceled)

Claim 11 (original): The method of claim 1, wherein said template polynucleotide is DNA.

Claims 12-23 (canceled)

Claim 24 (currently amended): The method of claim [[17]] 1, wherein the agent that cleaves RNA from an RNA/DNA heteroduplex is ~~RNase H~~ an enzyme.

Claims 25-26 (canceled)

Claim 27 (currently amended): The method of claim 1, wherein the RNA portion of the first primer is 5' with respect to the [[3'-DNA]] 3' DNA portion.

Claim 28 (currently amended): The method of claim 27, wherein the RNA portion of the amplification primer is 5' with respect to the [[3'-DNA]] 3' DNA portion.

Claims 29-32 (canceled)

Claim 33 (currently amended): The method of claim 1, wherein the RNA portion of the amplification primer is 5' with respect to the 3'[[-DNA]] DNA portion.

Claim 34 (original): The method of claim 33, wherein the 5' RNA portion of the amplification primer is adjacent to the 3' DNA portion.

Claim 35 (currently amended): The method of claim 1, wherein the RNA portion of the first primer consists of about 7 to about [[20]] 50 nucleotides.

Claim 36 (original): The method of claim 35, wherein the DNA portion of the first primer consists of about 5 to about 20 nucleotides.

Claims 37-38 (canceled)

Claim 39 (currently amended): The method of claim 1, wherein the RNA portion of the amplification primer consists of about 7 to about [[20]] 50 nucleotides.

Claim 40 (original): The method of claim 39, wherein the DNA portion of the amplification primer consists of about 5 to about 20 nucleotides.

Claims 41-45 (canceled)

Claim 46 (original): The method of claim 1, wherein the reaction mixture of step (b) further comprises a non-canonical nucleotide.

Claim 47 (original): The method of claim 46, wherein the non-canonical nucleotide is dUTP.

Claim 48 (original): The method of claim 1, wherein the reaction mixture of step (b) further comprises a labeled nucleotide.

Claim 49 (currently amended): A method for amplification of a template polynucleotide, comprising:

incubating a reaction mixture, said reaction mixture comprising:

(a) a complex comprising a RNA/DNA partial heteroduplex, wherein the complex is generated by incubating a first reaction mixture, said first reaction mixture comprising:

(i) a ~~polynucleotide~~ template polynucleotide;

(ii) a first primer; wherein the first primer is hybridizable to a multiplicity of template polynucleotide sites, wherein the first primer is a population of different ~~composite primer, the~~ composite ~~primer~~ primers each comprising ~~comprises~~ an RNA portion and a 3' DNA portion, wherein the composite primer comprises a 3' random sequence, and wherein the composite primer is a tailed primer that comprises a 5' portion that is not hybridizable to the template polynucleotide under conditions in which the first primer hybridizes to the template polynucleotide; ~~and wherein the composite primer is capable of hybridizing to a multiplicity of template polynucleotide sites;~~

(iii) a DNA-dependent DNA polymerase; and

(iv) an RNA-dependent DNA polymerase;

wherein the incubation is under conditions that permit ~~first primer random~~ hybridization of the first primer to the template polynucleotide, ~~and~~ primer extension to generate a first primer extension product, hybridization of a second primer to the first primer extension product, and extension of the second primer to generate a second primer extension product, whereby a complex comprising an RNA/DNA partial heteroduplex is generated;

(b) an amplification primer, wherein the amplification primer is a composite primer comprising an RNA portion and a 3' DNA portion, wherein the amplification primer comprises some of the sequence of the first primer, and wherein the first primer and the amplification primer are different primers;

(c) a DNA-dependent DNA polymerase; and

(d) an agent that cleaves RNA from an RNA/DNA ~~hybrid~~ heteroduplex;

wherein the incubation is under conditions that permit RNA cleavage, primer hybridization, primer extension, and displacement of the first primer extension product when its RNA is cleaved and another amplification primer binds to the second primer extension product and is extended, such that primer extension and strand displacement are repeated, whereby multiple copies of a polynucleotide amplification product are generated.

Claim 50 (canceled)

Claim 51 (currently amended): The method of claim [[1]] 49, wherein the agent that cleaves RNA from an RNA/DNA ~~hybrid~~ heteroduplex is an enzyme.

Claim 52 (currently amended): The method of claim 51, wherein the enzyme that cleaves RNA from an RNA/DNA ~~hybrid~~ heteroduplex is RNase H.

Claim 53 (currently amended): The method of claim 51, wherein said DNA-dependent DNA polymerase and said enzyme that cleaves RNA from an RNA/DNA ~~hybrid~~ heteroduplex are the same enzyme.

Claim 54 (currently amended): The method of claim 53, wherein said DNA-dependent DNA polymerase and said enzyme that cleaves RNA from an RNA/DNA ~~hybrid~~ heteroduplex are different enzymes.

Claim 55 (original): The method of claim 49, wherein the RNA portion of the amplification primer is 5' with respect to the 3'-DNA portion.

Claim 56 (original): The method of claim 55, wherein the 5' RNA portion of the amplification primer is adjacent to the 3' DNA portion.

Claim 57 (currently amended): The method of claim 49, wherein the RNA portion of the amplification primer consists of about 7 to about [[20]] 50 nucleotides.

Claim 58 (original): The method of claim 57, wherein the DNA portion of the amplification primer consists of about 5 to about 20 nucleotides.

Claim 59 (currently amended): The method of claim [[58]] 49, wherein the RNA portion of the amplification primer consists of about 10 to about [[20]] 50 nucleotides.

Claim 60 (original): The method of claim 59, wherein the DNA portion of the amplification primer consists of about 7 to about 20 nucleotides.

Claim 61 (canceled)

Claim 62 (original): The method of claim 49, wherein the reaction mixture further comprises a non-canonical nucleotide.

Claim 63 (original): The method of claim 62, wherein the non-canonical nucleotide is dUTP.

Claim 64 (original): The method of claim 49, wherein the reaction mixture further comprises a labeled nucleotide.

Claim 65 (currently amended): A method for amplification of a template polynucleotide, comprising:

incubating a reaction mixture, said reaction mixture comprising:

(a) a complex of a first primer extension product and a second primer extension product, wherein the first primer extension product is generated by extension of a first primer hybridized to target polynucleotide with a DNA polymerase, wherein the first primer is ~~a composite primer~~ hybridizable to a multiplicity of template polynucleotide sites, wherein the first primer is a population of different composite primers each comprising an RNA portion and a 3' DNA portion, wherein each composite primer comprises a 3' random sequence, and wherein each composite primer is a tailed primer that comprises a 5' portion that is not hybridizable to the template

polynucleotide under conditions in which the first primer hybridizes to the template polynucleotide ~~wherein the first primer is capable of hybridizing to a multiplicity of template polynucleotide sites~~, and wherein the second primer extension product is generated by extension of a second primer hybridized to the first primer extension product;

(b) an amplification primer, wherein the amplification is a composite primer ~~comprises~~ comprising an RNA portion and a 3' DNA portion, wherein the amplification primer comprises some of the sequence of the first primer, wherein the first primer and the amplification primer are different primers, and wherein the amplification primer is hybridizable to the second primer extension product;

(c) a DNA-dependent DNA polymerase; and

(d) an agent that cleaves RNA from an RNA/DNA ~~hybrid~~ heteroduplex;

wherein the incubation is under conditions that permit RNA cleavage, primer hybridization, primer extension, and displacement of ~~composite~~ the first primer extension product from the second primer extension product when ~~the RNA portion of the composite primer~~ its RNA is cleaved and another ~~composite~~ amplification primer binds and is extended, such that primer extension and strand displacement are repeated, whereby multiple copies of a polynucleotide amplification product are generated.

Claim 66 (canceled)

Claim 67 (currently amended): The method of claim 65, wherein said agent that cleaves RNA from a RNA/DNA ~~hybrid~~ heteroduplex is an enzyme.

Claim 68 (currently amended): The method of claim 67, wherein the enzyme that cleaves RNA from a RNA/DNA ~~hybrid~~ heteroduplex is RNase H.

Claim 69 (currently amended): The method of claim 67, wherein said DNA-dependent DNA polymerase and the enzyme that cleaves RNA from an RNA/DNA ~~hybrid~~ heteroduplex are the same enzyme.

Claim 70 (currently amended): The method of claim [[65]] 67, wherein said DNA-dependent DNA polymerase and the enzyme that cleaves RNA from an RNA/DNA ~~hybrid~~ heteroduplex are different enzymes.

Claim 71 (canceled)

Claim 72 (original): The method of claim 65, wherein said template polynucleotide is DNA.

Claim 73 (canceled)

Claim 74 (currently amended): The method of claim 65, wherein the RNA portion of the amplification primer is 5' with respect to the [[3'-DNA]] 3' DNA portion.

Claim 75 (original): The method of claim 74, wherein the 5' RNA portion of the amplification primer is adjacent to the 3' DNA portion.

Claim 76 (currently amended): The method of claim 65, wherein the RNA portion of the amplification primer consists of about 7 to about [[20]] 50 nucleotides.

Claim 77 (original): The method of claim 76, wherein the DNA portion of the amplification primer consists of about 5 to about 20 nucleotides.

Claim 78 (currently amended): The method of claim [[77]] 65, wherein the RNA portion of the amplification primer consists of about 10 to about [[20]] 50 nucleotides.

Claim 79 (original): The method of claim 78, wherein the DNA portion of the amplification primer consists of about 7 to about 20 nucleotides.

Claim 80 (canceled)

Claim 81 (original): The method of claim 65, wherein the reaction mixture further comprises a non-canonical nucleotide.

Claim 82 (original): The method of claim 81, wherein the non-canonical nucleotide is dUTP.

Claim 83 (original): The method of claim 65, wherein the reaction mixture further comprises a labeled nucleotide.

Claim 84 (currently amended): A method for amplification of a polynucleotide template, comprising:

(a) ~~random priming of~~ hybridization of a composite primer to a multiplicity of sites on a polynucleotide template, ~~strand with a composite primer;~~ wherein the composite primer comprises an RNA portion and a 3' DNA portion, ~~and wherein the composite primer is capable of hybridizing to a multiplicity of template polynucleotide sites,~~ thereby producing ~~a complex~~ complexes comprising [[a]] the composite primer ~~randomly~~ hybridized to the polynucleotide template; and

(b) incubating the complex in the presence of a DNA-dependent DNA polymerase, an RNA-dependent DNA polymerase, and an agent that cleaves RNA from [[a]] an RNA/DNA heteroduplex, whereby multiple copies of polynucleotide amplification product are generated by primer extension and strand displacement.

Claim 85 (original): The method of claim 84, wherein step (a) further comprises auxiliary primers.

Claim 86 (original): The method of claim 85, wherein step (b) further comprises auxiliary primers.

Claim 87 (original): The method of claim 84, wherein step (b) further comprises auxiliary primers.

Claim 88 (currently amended): The method of claim 84, wherein step (a) further comprises incubation of the polynucleotide template and the composite primer in the presence of a DNA-dependent DNA polymerase.

Claim 89 (currently amended): The method of claim 88, wherein step (a) further comprises [[a]] an RNA-dependent DNA polymerase.

Claim 90 (original): The method of claim 84, wherein the agent that cleaves RNA from a RNA/DNA heteroduplex is an enzyme.

Claim 91 (original): The method of claim 90, wherein the enzyme that cleaves RNA from a RNA/DNA heteroduplex is RNase H.

Claim 92 (original): The method of claim 90, wherein the RNA-dependent DNA polymerase, and the enzyme that cleaves RNA from an RNA/DNA heteroduplex are the same enzyme.

Claim 93 (original): The method of claim 92, wherein the DNA-dependent DNA polymerase, the RNA-dependent DNA polymerase and the enzyme that cleaves RNA from an RNA/DNA heteroduplex are the same enzyme.

Claim 94 (original): The method of claim 90, wherein the RNA-dependent DNA polymerase and the enzyme that cleaves RNA from an RNA/DNA heteroduplex are different enzymes.

Claim 95 (original): The method of claim 94, wherein the DNA-dependent DNA polymerase, the RNA-dependent DNA polymerase and the enzyme that cleaves RNA from an RNA/DNA heteroduplex are all different enzymes.

Claim 96 (original): The method of claim 84, wherein the DNA-dependent DNA polymerase and the RNA-dependent DNA polymerase are the same enzyme.

Claim 97 (original): The method of claim 84, wherein the DNA-dependent DNA polymerase and the RNA-dependent DNA polymerase are different enzymes.

Claim 98 (currently amended): The method of claim 84, wherein the RNA portion of the composite primer is 5' with respect to the 3'[[-DNA]] DNA portion.

Claim 99 (original): The method of claim 98, wherein the 5' RNA portion of the composite primer is adjacent to the 3' DNA portion.

Claim 100 (currently amended): The method of claim 84, wherein the RNA portion of the composite primer consists of about 7 to about [[20]] 50 nucleotides.

Claim 101 (original): The method of claim 100, wherein the DNA portion of the composite primer consists of about 5 to about 20 nucleotides.

Claims 102-103 (canceled)

Claim 104 (original): The method of claim 84, wherein the composite primer is selected from the group consisting of 5'-*GACGGAUGCGGUCU*dCdCdAdGdTdGdT-3 (SEQ ID NO:1); and 5'-*CGUAUUCUGACGACGUACUC*dTdCdAdGdCdCdT-3' (SEQ ID NO:2), wherein italics denote ribonucleotides and "d" denotes deoxyribonucleotides.

Claim 105 (currently amended): The method of claim 84, wherein [[the]] step (b) further comprises incubation ~~of incubating is further~~ in the presence of a non-canonical nucleotide.

Claim 106 (original): The method of claim 105, wherein the non-canonical nucleotide is dUTP.

Claim 107 (currently amended): The method of claim 84, wherein [[the]] step (b) further comprises incubation ~~of incubating is further~~ in the presence of a labeled nucleotide.

Claim 108 (currently amended): A method for amplification of a polynucleotide template, comprising:

(a) randomly priming a template polynucleotide with a first primer, wherein said first primer ~~is a composite primer that~~ is hybridizable to a multiplicity of template polynucleotide sites, wherein the first primer is a population of different composite ~~primer~~ primers each comprising ~~comprises~~ [[a]] an RNA portion and a 3' DNA portion, and wherein each composite primer is a tailed primer that comprises a 5' portion that is not hybridizable to the template polynucleotide under conditions in which the first primer hybridizes to the template polynucleotide;

(b) extending said first primer with a DNA polymerase to generate a first primer extension product;

(c) hybridizing a second primer to the first primer extension product;

(d) extending said second primer with a DNA-dependent DNA polymerase and an RNA-dependent polymerase to generate a second primer extension product, whereby a complex comprising an RNA/DNA heteroduplex is generated;

[[(c)]] (e) cleaving RNA from the first primer with an agent that cleaves RNA from a RNA/DNA heteroduplex;

[[(d)]] (f) hybridizing an amplification primer to the ~~template polynucleotide~~ second primer extension product, wherein said amplification primer is a composite primer comprising a RNA portion and a 3' DNA portion, wherein the amplification primer comprises some of the sequence of the first primer, and wherein the first primer and the amplification primer are different primers;

[[(e)]] (g) extending the hybridized amplification primer by strand displacement DNA synthesis;

(f) cleaving RNA from the amplification primer with an agent that cleaves RNA from a RNA/DNA heteroduplex, such that another amplification primer ~~can hybridize~~ hybridizes and [[be]] is extended,

whereby multiple copies of a polynucleotide amplification product are generated.

Claim 109 (original): The method of claim 108, wherein said template polynucleotide is DNA.

Claims 110-114 (canceled)

Claim 115 (currently amended): The method of claim [[114]] 108, wherein the agent that cleaves RNA ~~in a~~ from an RNA/DNA ~~hybrid~~ heteroduplex is an enzyme.

Claim 116 (currently amended): The method of claim 115, wherein the enzyme that cleaves RNA ~~in a~~ from an RNA/DNA ~~hybrid~~ heteroduplex is RNase H.

Claims 117-119 (canceled)

Claim 120 (original): The method of claim 108, wherein the DNA polymerase of step (b) is a DNA-dependent DNA polymerase.

Claim 121 (canceled)

Claim 122 (currently amended): The method of claim [[121]] 108, wherein the DNA-dependent DNA polymerase and the RNA-dependent DNA polymerase are the same enzyme.

Claim 123 (currently amended): The method of claim [[122]] 108, wherein the DNA-dependent DNA polymerase and the RNA-dependent DNA polymerase are different enzymes.

Claims 124-126 (canceled)

Claim 127 (currently amended): The method of claim 108, wherein the RNA portion of the first primer is 5' with respect to the [[3'-DNA]] 3' DNA portion.

Claim 128 (currently amended): The method of claim [[127]] 108, wherein the RNA portion of the amplification primer is 5' with respect to the [[3'-DNA]] 3' DNA portion.

Claim 129 (original): The method of claim 128, wherein the 5' RNA portion of the amplification primer is adjacent to the 3' DNA portion.

Claim 130 (original): The method of claim 127, wherein the 5' RNA portion of the first primer is adjacent to the 3' DNA portion.

Claims 131-134 (canceled)

Claim 135 (currently amended): The method of claim 108, wherein the RNA portion of the first primer consists of about 7 to about [[20]] 50 nucleotides.

Claim 136 (original): The method of claim 135, wherein the DNA portion of the first primer consists of about 5 to about 20 nucleotides.

Claims 137-138 (canceled)

Claim 139 (currently amended): The method of claim 108, wherein the RNA portion of the ~~first~~ amplification primer consists of about 7 to about [[20]] 50 nucleotides.

Claim 140 (currently amended): The method of claim 139, wherein the DNA portion of the ~~first~~ amplification primer consists of about 5 to about 20 nucleotides.

Claims 141-145 (canceled)

Claim 146 (currently amended): The method of claim 108, wherein step [[(e)]] (g) is carried out in the presence of a non-canonical nucleotide.

Claim 147 (original): The method of claim 146, wherein the non-canonical nucleotide is dUTP.

Claim 148 (currently amended): The method of claim 108, wherein step [[(e)]] (g) is carried out in the presence of a labeled nucleotide.

Claim 149 (currently amended): A method for amplification of a polynucleotide template, comprising:

incubating a reaction mixture comprising:

(a) a polynucleotide template strand;

(b) a ~~first~~ composite primer, wherein said ~~first primer is a~~ composite primer ~~comprising~~ comprises [[a]] an RNA portion and a 3' DNA portion, and wherein the ~~first~~ composite primer is capable of hybridizing to a multiplicity of template polynucleotide sites;

(c) a DNA-dependent DNA polymerase;

(d) a RNA-dependent DNA polymerase; and

(e) an agent that cleaves RNA from a RNA/DNA heteroduplex,

whereby multiple copies of polynucleotide amplification product are generated by primer extension and strand displacement.

Claim 150 (original): The method of claim 149, wherein the reaction mixture further comprises auxiliary primers.

Claim 151 (original): The method of claim 149, wherein the agent that cleaves RNA from a RNA/DNA heteroduplex is an enzyme.

Claim 152 (original): The method of claim 151, wherein the enzyme that cleaves RNA from a RNA/DNA heteroduplex is RNase H.

Claim 153 (currently amended): The method of claim 151, wherein the RNA-dependent DNA polymerase [[,]] and the enzyme that cleaves RNA from an RNA/DNA heteroduplex are the same enzyme.

Claim 154 (original): The method of claim 153, wherein the DNA-dependent DNA polymerase, the RNA-dependent DNA polymerase and the enzyme that cleaves RNA from an RNA/DNA heteroduplex are the same enzyme.

Claim 155 (original): The method of claim 151, wherein the RNA-dependent DNA polymerase and the enzyme that cleaves RNA from an RNA/DNA heteroduplex are different enzymes.

Claim 156 (original): The method of claim 155, wherein the DNA-dependent DNA polymerase, the RNA-dependent DNA polymerase and the enzyme that cleaves RNA from an RNA/DNA heteroduplex are all different enzymes.

Claim 157 (original): The method of claim 149, wherein the DNA-dependent DNA polymerase and the RNA-dependent DNA polymerase are the same enzyme.

Claim 158 (original): The method of claim 149, wherein the DNA-dependent DNA polymerase and the RNA-dependent DNA polymerase are different enzymes.

Claim 159 (canceled)

Claim 160 (currently amended): The method of claim [[159]] 149, wherein the RNA portion of the ~~amplification~~ composite primer is 5' with respect to the [[3'-DNA]] 3' DNA portion.

Claim 161 (currently amended): The method of claim 160, wherein the 5' RNA portion of the ~~amplification~~ composite primer is adjacent to the 3' DNA portion.

Claim 162 (currently amended): The method of claim 149, wherein the RNA portion of the ~~first~~ composite primer consists of about 7 to about [[20]] 50 nucleotides.

Claim 163 (currently amended): The method of claim 162, wherein the DNA portion of the ~~first~~ composite primer consists of about 5 to about 20 nucleotides.

Claims 164-165 (canceled)

Claim 166 (currently amended): The method of claim 149, wherein the ~~first~~ composite primer is selected from the group consisting of 5'-*GACGGAUGCGGUCU*dCdCdAdGdTdGdT-3 (SEQ ID NO:1); and 5'-*CGUAUUCUGACGACGUACUC*dTdCdAdGdCdCdT-3' (SEQ ID NO:2), wherein italics denote ribonucleotides and "d" denotes deoxyribonucleotides.

Claim 167 (original): The method of claim 149, wherein the reaction mixture further comprises a non-canonical nucleotide.

Claim 168 (original): The method of claim 167, wherein the non-canonical nucleotide is dUTP.

Claim 169 (original): The method of claim 149, wherein the reaction mixture further comprises a labeled nucleotide.

Claim 170 (original): A method of making a polynucleotide array, comprising:

immobilizing polynucleotide amplification product onto a substrate, said polynucleotide amplification product produced according to any of methods of claims 1, 49, 65, 84, 108 or 149.

Claim 171 (original): The method of claim 170, wherein said polynucleotide amplification products are generated by amplification of template polynucleotide from a defined source.

Claim 172 (original): The method of claim 171, wherein the defined source is a defined cell population.

Claim 173 (original): The method of claim 170, wherein said substrate is selected from the group consisting of paper, glass, plastic, nitrocellulose, silicon, and optical fiber.

Claim 174 (original): The method of claim 170, wherein the substrate is a particle.

Claim 175 (original): The method of claim 174, wherein the particle is a bead.

Claim 176 (original): The method of claim 175, wherein the bead is labeled with a dye.

Claim 177 (original): A method of characterizing a nucleic acid, comprising:

analyzing polynucleotide amplification product, said amplification product produced by the method of any of claims 1, 29, 65, 84, 108, or 149.

Claim 178 (original): The method of claim 177, wherein the analyzing is carried out by contacting the amplification product with a probe.

Claim 179 (original): The method of claim 177, wherein the analyzing is carried out by quantifying a sequence of interest in the amplification product.

Claim 180 (original): The method of claim 177, wherein the analyzing is carried out by sequencing the amplification product.

Claim 181 (original): The method of claim 177, wherein the analyzing is carried out by detecting any alteration in a target nucleic acid sequence in the amplification product, as compared to a reference nucleic acid sequence.

Claim 182 (currently amended): The method of claim 181, wherein detection of an alteration in a target nucleic acid sequence is carried out [[y]] by a method selected from the group consisting of allele specific primer extension, allele specific probe ligation, differential probe hybridization, and limited primer extension.

Claims 183-184 (canceled)

Claim 185 (original): A method of preparing a library, comprising:

preparing a library of polynucleotide amplification products, said amplification products produced by any of the methods of claims 1, 29, 65, 84, 108, or 149.

Claims 186-187 (canceled)

Claim 188 (original): A method for archiving polynucleotide templates, comprising:

storing polynucleotide amplification product, wherein said polynucleotide amplification product is produced according to the method of any of claims 1, 29, 65, 84, 108, or 149.

Claim 189 (currently amended): A kit for amplifying template polynucleotide, said kit comprising:

a composite primer that is capable of binding to multiple sites within template polynucleotide; and

instructions for carrying out the method according to any of ~~claims1~~ claim 1, 29, 65, 84, 108, or 149.

Claim 190 (original): The kit of claim 189, further comprising auxiliary primers.

Claim 191 (new): The method of claim 49, wherein the RNA portion of the first primer is 5' with respect to the 3'-DNA portion.

Claim 192 (new): The method of claim 191, wherein the 5' RNA portion of the first primer is adjacent to the 3' DNA portion.

Claim 193 (new): The method of claim 49, wherein said first primer and said second primer are the same primer.

Claim 194 (new): The method of claim 193, wherein said first primer and said second primer are different primers.

Claim 195 (new): The method of claim 65, wherein the RNA portion of the first primer is 5' with respect to the 3'-DNA portion.

Claim 196 (new): The method of claim 195, wherein the 5' RNA portion of the first primer is adjacent to the 3' DNA portion.

Claim 197 (new): The method of claim 65, wherein said first primer and said second primer are the same primer.

Claim 198 (new): The method of claim 197, wherein said first primer and said second primer are different primers.